

APPENDIX B.

Apostle Islands National Lakeshore (APIS)

Establishment: September 26, 1970.

Designations: National Lakeshore and a Class II airshed. A Wilderness suitability study was completed in March of 2004. Eighty percent of the park is proposed for wilderness designation.

Purpose and significance statements important to ecological monitoring:

- To conserve the islands and shorelines and their related geographic, scenic, and scientific values;
- To preserve the unique flora and fauna of the lakeshore;
- To provide for the enjoyment and understanding of the unique natural, historical, scientific, and archeological features of the lakeshore; and
- To permit hunting, fishing, and trapping according to federal and state laws.

General description: Apostle Islands National Lakeshore is located near Bayfield in extreme northwestern Wisconsin. It consists of 21 islands, ranging in size from 3 to 10,000 acres, and a 12-mile segment along the mainland shore of Lake Superior. The lakeshore protects 69,372 acres, including a ¼ mile buffer that extends into Lake Superior. The park is at the northwestern limits of the hemlock-hardwood forest and contains elements of the southern boreal forest. The lakeshore has a wide diversity of coastal features, including sand spits, cusped forelands, tombolos, a barrier spit, beaches, and dunes, as well as sandstone cliffs and caves.

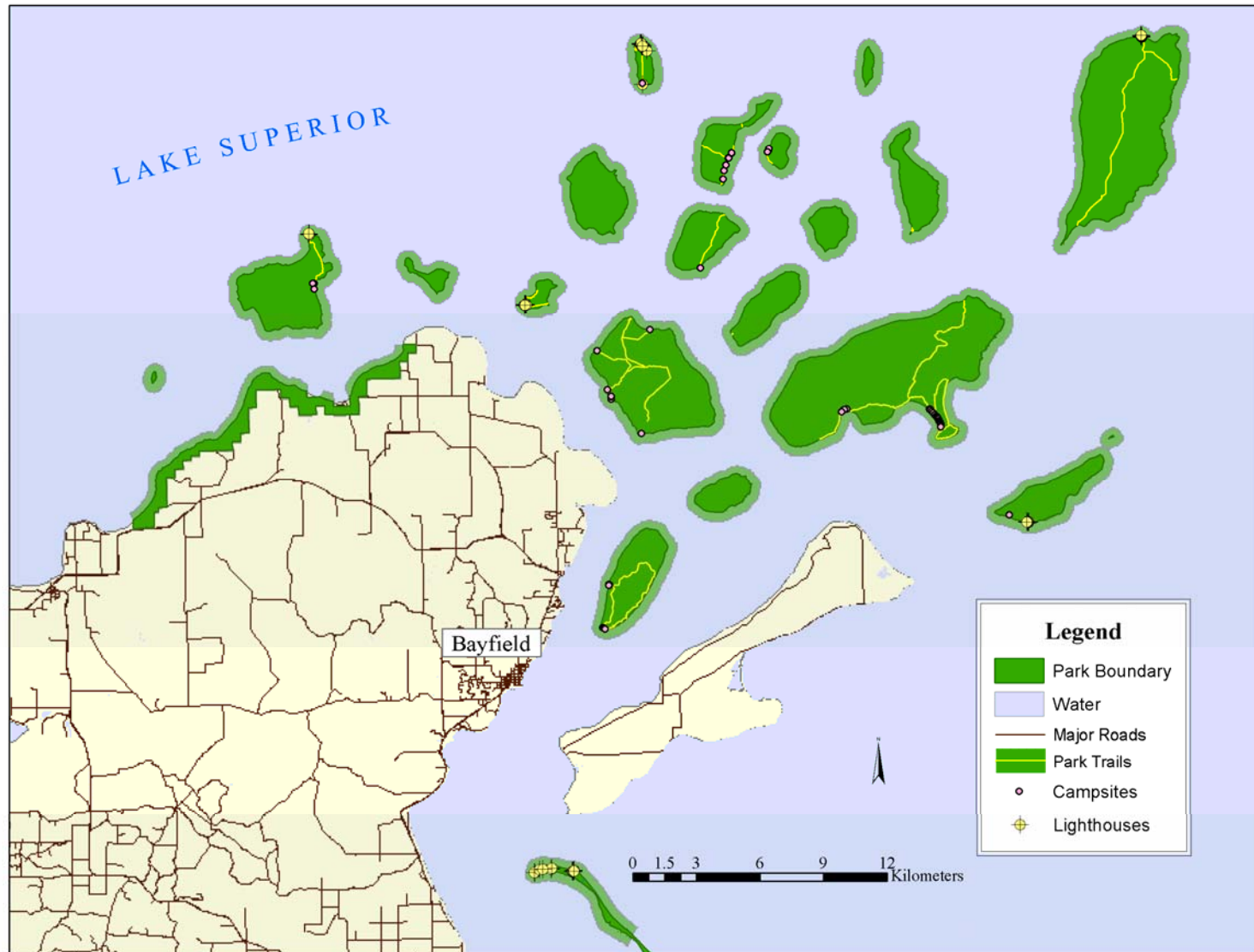
Visitation: About 190,000 people visit the park. Visitors come to enjoy the park's natural and cultural resources. Visitors access the islands in a variety of ways, including kayaking, motor boating, sailing, and concession boat cruises. There are trails, campsites, and picnic sites on several of the islands and the mainland.

Critical resources: The park has old-growth forest stands that are exceptionally rare because they have not been subjected to ungulate browsing. The park provides important habitat for birds, including: stopover areas for high numbers of migrants, including peregrine falcons and a wide diversity of shorebirds; nesting habitat for over 150 species of breeding birds; critical habitat for the federal and state endangered piping plover; nesting habitat for bald eagles; and colonial bird habitat. Important rare plant habitats include coastal sandstone cliffs and clay bluffs that provide habitat for arctic remnants, wetlands, lagoons, and steep ravines. The park also provides spawning areas for lake trout and whitefish.

Primary threats: Airborne pollutants and toxic chemicals that move up the food-chain, exotic plants and animals, and the potential for human developments such as pulp mills, underwater logging and oil extraction.

Important management documents: General Management Plan completed in 1989 and a new GMP was started in 2004. Resource Management Plan revised in 1999. Natural Resources Monitoring Plan revised in 1999.

For important park monitoring reports see Supplemental Document #3



Map of Apostle Islands National Lakeshore and surrounding area.

APPENDIX B. CONTINUED

Grand Portage National Monument (GRPO)

Establishment: On January 27, 1960 the Grand Portage Band of the Minnesota Chippewa Tribe relinquished certain lands to the United States for the creation of Grand Portage National Monument.

Designations: The entire monument is listed on the National Register of Historic Places; all 710 acres are part of an historic district designation. GRPO is designated a Class II airshed.

Purpose and significance statements important to ecological monitoring:

- Similar to all other NPS units, the monument must "... conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of same...."
- The monument is significant because of its association with the fur trade, the exploration and colonization of the Northwest, its historic/geographic link between the United States and Canada, and its excellent state of preservation in a semi-wilderness setting.

General description: Grand Portage National Monument is located 35 miles northeast of Grand Marais, Minnesota in the extreme northeastern 'arrowhead' region of the state near the Canadian border. The monument protects 710 acres of land including the historic trading post of the North West Company on Lake Superior, the site of Fort Charlotte on the Pigeon River, and an 8.5 mile historic canoe portage trail that connects the two sites. The portage trail crosses several riparian areas and over the Grand Portage Highlands with an 800-foot rise in elevation. The area is covered by a near-boreal forest, with birch-aspen-spruce-fir communities dominating most sites. The Grand Portage trail corridor bisects the Grand Portage Band of Minnesota Chippewa Reservation. Surrounding land use greatly influences resource management at GRPO. Forestry practices on Reservation lands are carefully integrated with wildlife management objectives, and large areas are set aside to preserve the near wilderness character of the region.

Visitation and human use: Most visitors to GRPO come to see the site of the North West Company on Lake Superior. Some individuals hike the 8.5-mile portage trail to Fort Charlotte.

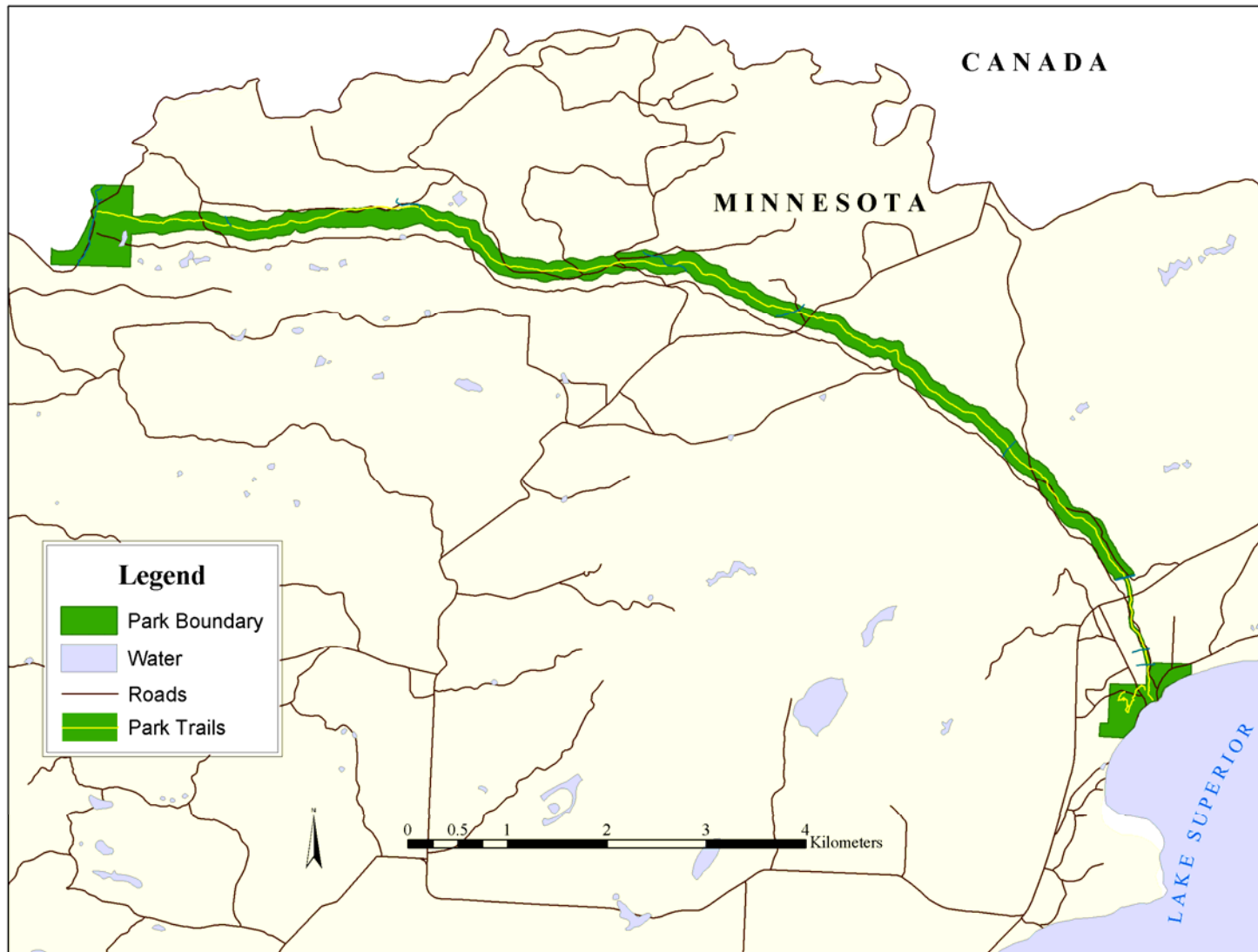
Critical resources: At least 16 species of rare plants are found within the monument. Many of these plants are adjacent to the most heavily used portion of GRPO. Coaster brook trout, which were nearly extirpated from Lake Superior, inhabit the nearshore zone of Lake Superior and enter the mouth of the Grand Portage Creek for spawning, along with other fish species. There are self-sustaining populations of gray wolf, black bear, and moose in the adjacent reservation. Peregrine falcons, bald eagles, and smaller raptors have suitable nesting sites in the area, and are frequently observed hunting over the monument. The forested areas along the trail and on adjoining lands are slowly returning to pre-European settlement conditions.

Primary threats: Difficulty of managing a narrow corridor of habitat; entrenched populations of exotic plants, perhaps introduced more than 200 years ago; logging and other human uses on adjacent lands is a potential problem for this narrow corridor; airborne pollutants.

Important management documents: The GRPO Master Plan was completed in 1973. The General Management Plan (draft 2002) is nearly finalized. A Resource Management Plan was completed in 1995, with a revision approved in January 2001.

For important park monitoring reports see Supplemental Document #3

APPENDIX B. CONTINUED



Map of Grand Portage National Monument and surrounding area.

APPENDIX B. CONTINUED

Indiana Dunes National Lakeshore (INDU)

Establishment: November 5, 1966

Designations: National Lakeshore, Class II airshed.

Purpose and significant statements important to ecological monitoring:

- Preserve, maintain, and restore the integrity and character of the natural resources and processes.
- The lakeshore contains exceptional biological diversity and outstanding floral richness, resulting from the combination of complex geological processes and the convergence of several major North American life zones.
- The lakeshore offers outstanding opportunities for scientific research due to the diversity and complexity of its natural systems, and it provides a dynamic laboratory for early plant succession and faunal studies.

General Description: Indiana Dunes runs about 25 miles along southern Lake Michigan and includes 15,000 acres. Biological diversity is one of the most significant features of the lakeshore and a primary reason for its establishment. This diversity is greater than most areas of similar size because Indiana Dunes is in several ecological transition zones, including where northern conifer forests meet the temperate hardwood forests and tallgrass prairies of the Midwest. Diverse habitat types include: beaches, bogs, prairies, black oak savannas, forests, wetlands, and marshes. The lakeshore is comprised of unconsolidated soils on which landforms range from open beach and active dunes to stabilized and extensively vegetated older dunes and moraines. Some dunes, like Mount Baldy, rise to heights of over 100 feet above the shoreline.

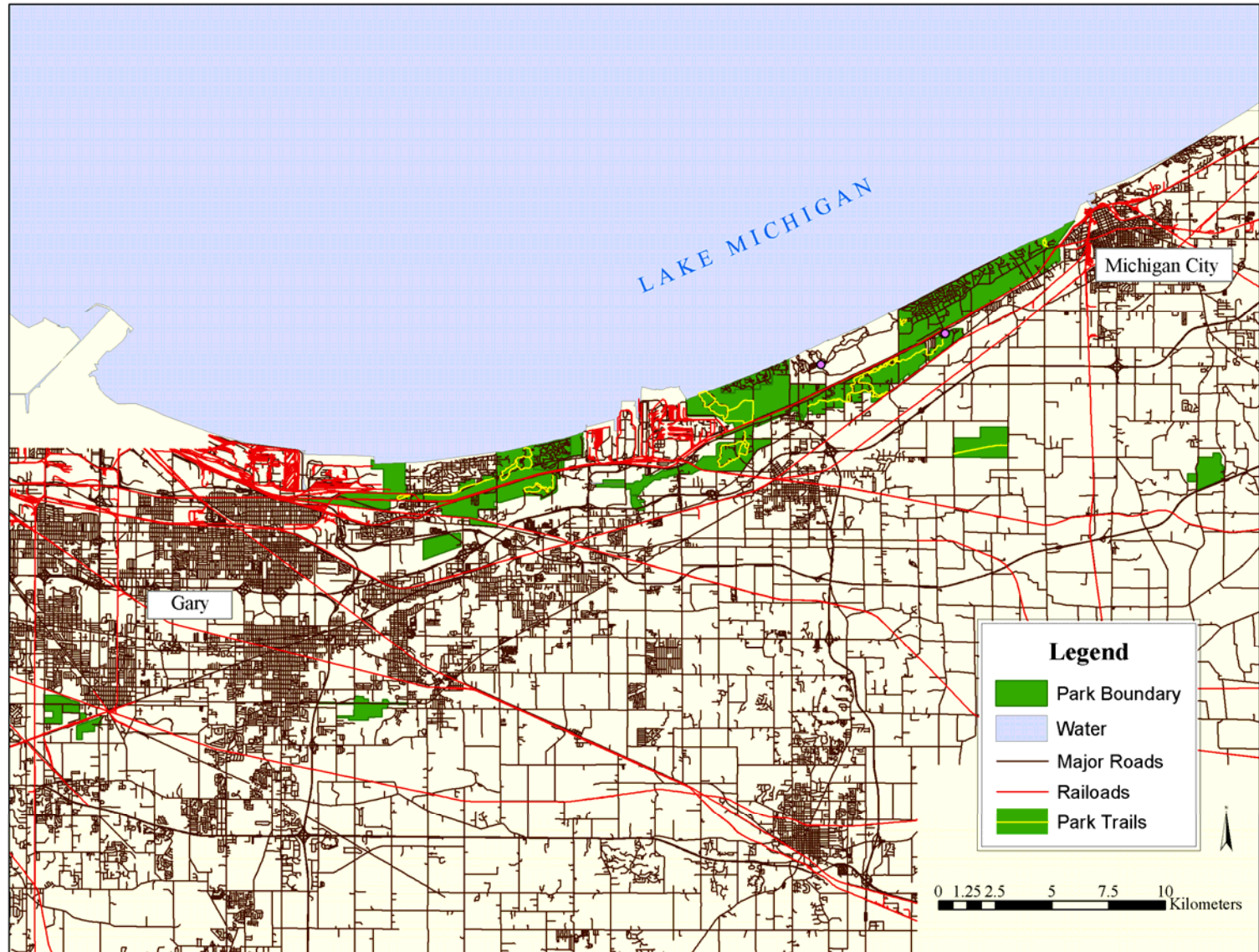
Visitation and human uses: The park provides both passive and active recreation for its visitors, including the 8.5 million people who live within 90 minutes of the park. Visitors come primarily to view the dunes, hike, picnic, and swim along the beaches.

Critical resources: The park serves as a home to the federally listed Karner blue butterfly (*Lycaeides melissa samuelis*) and Pitcher's thistle (*Cersium pitcheri*). The national lakeshore also provides a chance to preserve important rare plant communities.

Primary threats: Indiana Dunes is a classic example of a park that is an island of habitat surrounded by industry, transportation corridors, agriculture, and municipalities. Roads, ditches, and other barriers disrupt natural ecosystem processes within the park. Lakeshore erosion, exotic species, and air pollutants are also major concerns.

Important management documents: The General Management Plan was completed in 1997. The Resource Management Plan was completed 1999.

For important park monitoring reports see Supplemental Document #3



Map of Indiana Dunes National Lakeshore and surrounding area.

APPENDIX B. CONTINUED

Isle Royale National Park (ISRO)

Establishment: Authorized on March 3, 1931.

Designations: 99% of land area and inland waters are designated as Wilderness; designated a U.S. Biosphere Reserve under the United Nations' Man and the Biosphere Program; designated a Class I airshed.

Purpose and significance statements important to ecological monitoring:

- Preserve and protect the park's wilderness character.
- Preserve and protect the parks' natural resources and ecological processes.
- Provide opportunities for scientific study of ecosystem components.
- Known for its world renowned long-term wolf/moose predator/prey study
- Park waters contain the most productive native fishery and genetically diverse lake trout populations in Lake Superior.
- The park has several arctic-alpine and western disjunct species of plants.

General description: Isle Royale is a remote island archipelago in northwestern Lake Superior. It consists of one large island that is 45 miles long and nine miles wide surrounded by about 400 small islands. The park protects 571,790 acres of area extending up to 4.5 miles into Lake Superior from the outer islands. There are many inland lakes, ponds, and streams. The island is densely forested with northern boreal spruce-fir forest near the cool, moist shoreline of Lake Superior, and northern hardwoods in the warmer, drier interior.

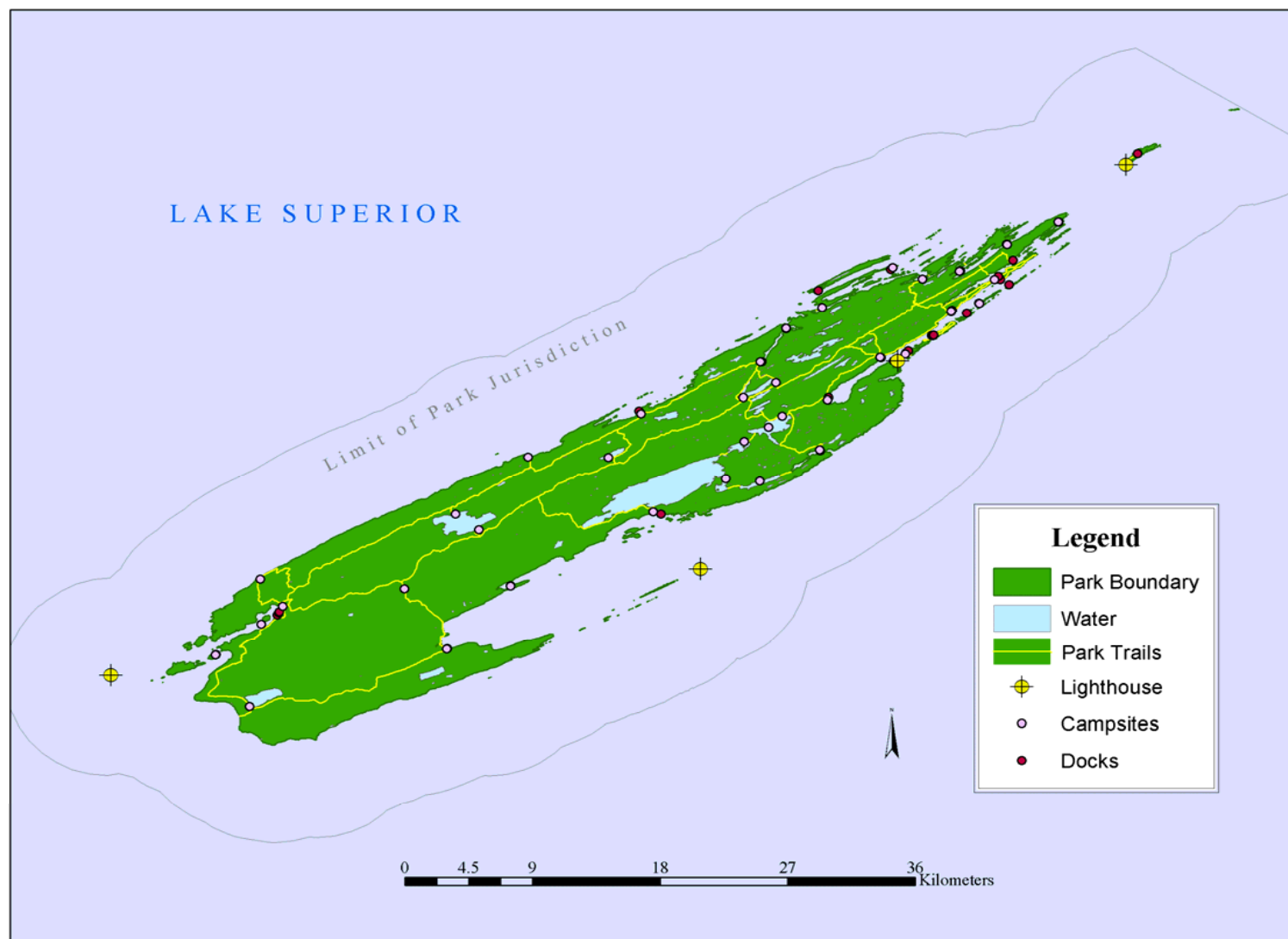
Visitation: About 17,000 visitors reach the island annually. Visitation occurs only in the summer months when most visitors must access the park via ferries from Houghton or Copper Harbor, MI, or from Grand Portage, MN.

Critical resources: Wolves and moose are perhaps the most famous park resources, but other critical resources in the park include the only naturally-reproducing coaster brook trout population in the United States; the most genetically diverse lake trout population in Lake Superior; several arctic/alpine disjunct plant species, as well as over 80 species of state listed rare plant species; the largest remaining Common Loon (state-listed as threatened) population in Michigan; and increasing nesting populations of bald eagles and osprey.

Primary threats: Airborne pollutants, waters with contaminants such as mercury and PCBs, exotic plants and animals (both aquatic and terrestrial), diseases spread from domestic animals.

Important management documents: General Management Plan completed in 1998. Resource Management Plan completed 1999.

For important park monitoring reports see Supplemental Document #3



Map of Isle Royale National Park and surrounding waters.

APPENDIX B. CONTINUED

Mississippi National River and Recreation Area (MISS)

Establishment: Congress established the MISS on November 18, 1988. In 1990 a Mississippi River Coordinating Commission was appointed by the Secretary of Interior to develop an integrated resources management plan.

Designations: National River and National Recreation Area; Class II airshed.

Purpose and significance statements important to ecological monitoring:

- Protect, preserve, and enhance the significant values of the Mississippi River.
- Encourage coordination of federal, state, and local resource management programs.
- Provide a framework to assist the state of Minnesota and local governments develop and implement integrated resource management programs to ensure orderly public and private development.
- The Mississippi River is one of the world's great rivers and part of one of the most complex ecosystems on the planet.

General description: MISS includes 72 miles of the Mississippi River and four miles of the Minnesota River and encompasses about 54,000 acres of public and private land and water. Less than 50 acres of land, all on islands within the river, are actually owned and under regulatory authority of the NPS. This section of river, some of which flows through metropolitan St. Paul and Minneapolis, is a major transportation corridor and yet a place for recreation and quiet in the midst of an urban environment. Numerous private, state, county, and other federal landowners make management of access, resource use, and development complex. The rivers themselves, and the riparian zones along the shorelines and islands, are the primary biotic communities of interest.

Visitation and human uses: The MISS corridor is used primarily by residents of the Twin Cities metropolitan area with a current population of 2,560,000 people. Recreational activities include: fishing, hunting, boating, canoeing, cross-country skiing, snowshoeing, hiking, bicycling, jogging, picnicking, bird watching, pleasure driving, and photography. Walking and nature study are popular activities.

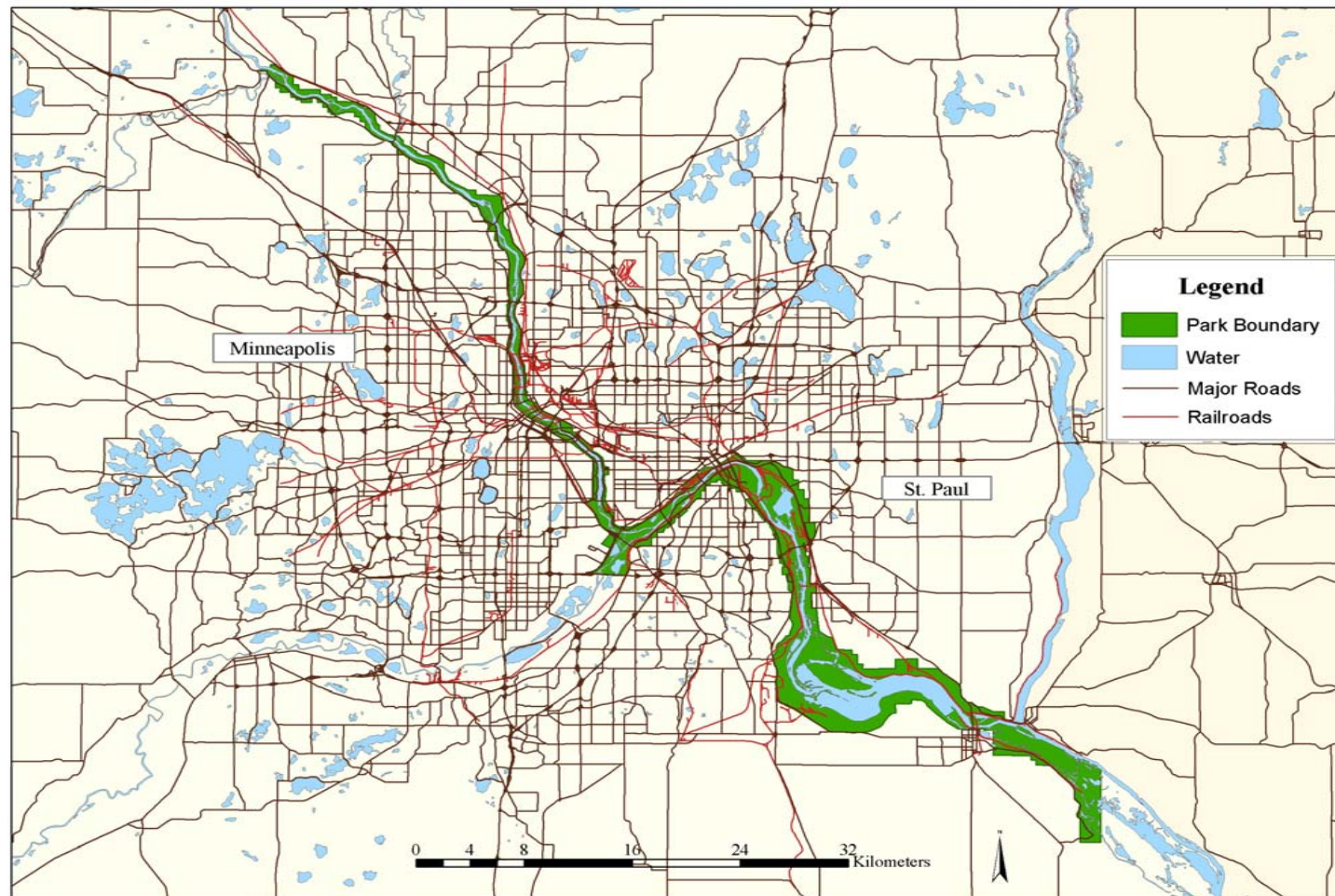
Critical resources: The Mississippi River is the most important mid-continental migration corridor for waterfowl and other migratory birds in North America. Although the 72 miles within MISS is a small portion of the 2,400-mile Mississippi River, it is an essential link through this highly fragmented and industrialized area. Its protection is critical because it helps maintain the migration route of numerous fishes, waterfowl, and other wildlife.

Primary threats: Airborne pollutants, noise pollution, waters contaminated with toxic waste, invasive or exotic animals and plants (especially buckthorn species, *Rhamnus cathartica* and *Frangula alnus*), diseases spread from domestic animals, land use practices within and outside the boundaries, urban sprawl, industrialization, complex land ownership. There are 114 hazardous waste sites within or near the MISS boundary; 19 are on the state Superfund list and six are on the national Superfund list.

Important management documents: The Final Comprehensive Management Plan Environmental Impact Statement was completed in 1994. A draft Resource Management Plan was completed in March 2002.

For important park monitoring reports see Supplemental Document #3

APPENDIX B. CONTINUED



Map of Mississippi National River and Recreation Area and surrounding vicinity.

APPENDIX B. CONTINUED

Pictured Rocks National Lakeshore (PIRO)

Establishment: October 16, 1966.

Designations: National Lakeshore. Designated a Class II airshed.

Purpose and significance statements important to ecological monitoring:

- Preserve the diminishing shoreline of the United States and its related geographic and scientific features.
- ‘Geographic and scientific features’ include the multicolored sandstone cliffs that reach 200 feet above Lake Superior and extend along 12 of the 42 miles of shoreline.
- The Grande Sable Dunes, covering about 5 mi² are equally important.

General description: Pictured Rocks protects 71,397 acres of land including 42 miles of Lake Superior shoreline. The park is located along the south-central shore of Lake Superior within a transition zone between the boreal and eastern deciduous forest biomes. Hardwood forests are prevalent, but conifers dominate some sites. Wetlands are common throughout the park. The cold, moist climate along the lakeshore greatly influences the biotic communities. The park is divided into two distinct ownership and management zones; the federally owned shoreline zone, and a non-federal buffer zone. Sustained yield timber harvesting and other consumptive uses are allowed in the buffer zone; however, these uses were intended by Congress to be subordinate to public recreation and the protection of “the usefulness and attractiveness of the lakeshore.”

Visitation and human uses: About 450,000 visitors reach the lakeshore annually, primarily to view the sandstone cliffs and sand dunes and to picnic and swim along the miles of beaches. The lakeshore is open to hunting and fishing, which is managed cooperatively with the state of Michigan; trapping is allowed only within the Inland Buffer Zone.

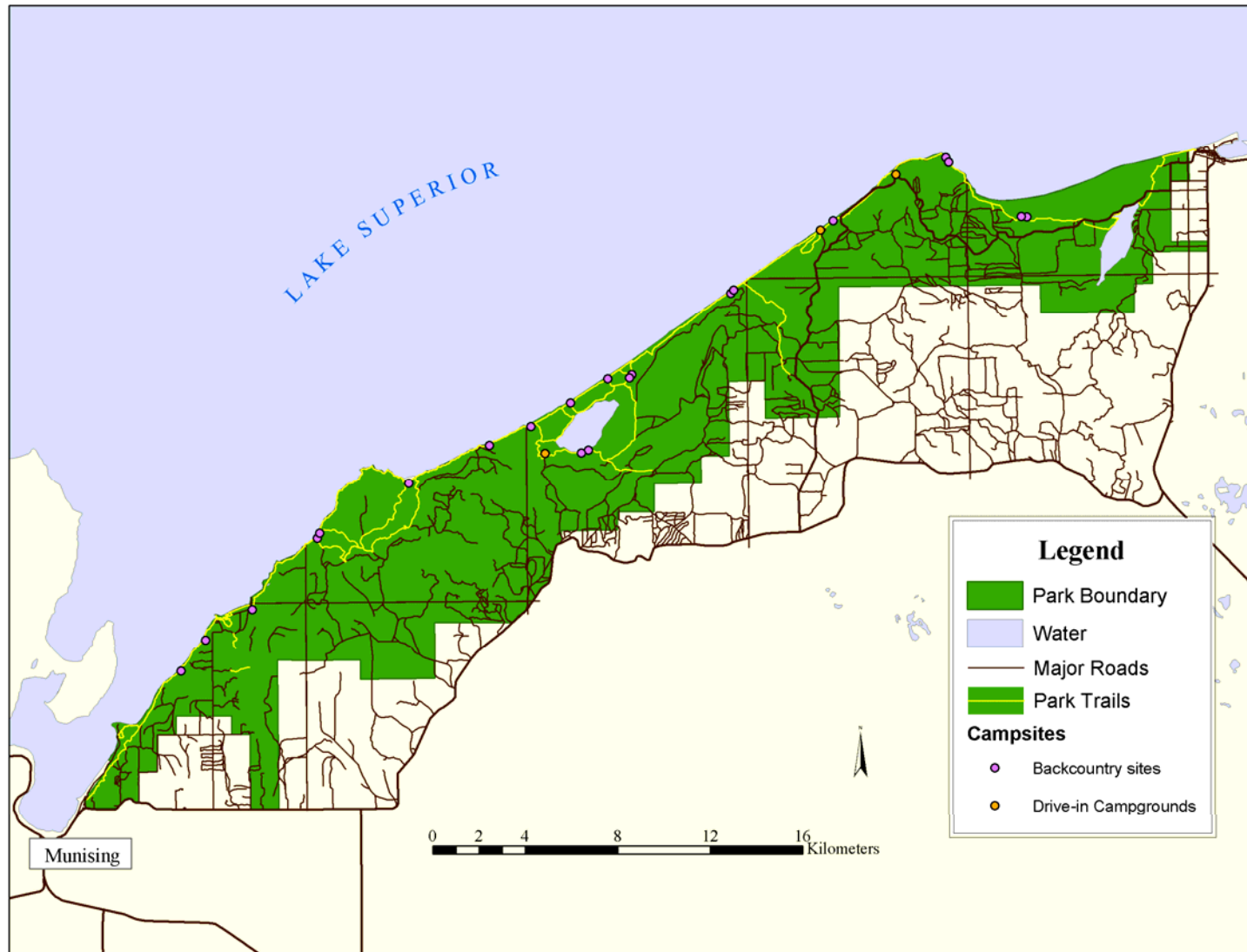
Critical resources: The park occasionally serves as a nesting area for the federally endangered piping plover. Attempts to reintroduce peregrine falcons occurred in 1989 and 1991 and pairs have been occasional summer residents with successful nests in 1994, 2001, and 2002. Protection of bald eagle nest sites is a high priority. Gray wolves are returning to the region, but packs are not known to reside in the park. The forested areas are slowly returning to pre-European settlement conditions and monitoring this progression is integral to understanding the terrestrial biotic communities. The Grand Sable Dunes contain important rare plant communities.

Primary threats: Airborne pollutants, waters known to be contaminated with relatively moderate levels of toxics, exotic plants and animals (aquatic and terrestrial), potentially harmful land use practices (e.g., timber harvest, development) in the Inland Buffer Zone and outside the boundary in the upper end of watersheds.

Important management documents: The General Management Plan was implemented in 1981 and a revision completed in 2003. A draft Resource Management Plan is in place.

For important park monitoring reports see Supplemental Document #3

APPENDIX B. CONTINUED



Pictured Rocks National Lakeshore and surrounding area.

APPENDIX B. CONTINUED

Saint Croix National Scenic Riverway (SACN)

Establishment: Upper Saint Croix in 1968; Lower Saint Croix in 1972.

Designations: National Scenic Riverway. Designated a Class II airshed.

Purpose and significance statements important to ecological monitoring:

- The primary significance of the St. Croix National Scenic Riverway is its relatively free-flowing, near primitive ecological condition. The Wild and Scenic River Act of 1968 declares: "... certain selected rivers... shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected..."
- The riverway is one of the most diverse NPS units in the Midwest with over 80 state and federally listed plants and animals.
- There are 38 – 40 species of freshwater mussels including two federally listed species.

General description: The St. Croix National Scenic Riverway protects 92,735 acres including 252 miles of the St. Croix and Namekagon Rivers in eastern Minnesota and northwest Wisconsin. The park spans three major biomes: boreal forest, eastern deciduous forest, and oak and pine savanna. The rivers themselves, and the riparian zones along them, greatly influence the biotic communities. Wetlands are common throughout the park. The park is divided into two distinct management zones: the upper St. Croix and Namekagon Rivers, and the lower St. Croix River. Numerous private, state, county, and other federal landowners along the corridor make management of access and resource use complex.

Visitation and human uses: About 480,000 visitors come to the riverway annually, primarily to canoe, fish, and swim along the miles of river.

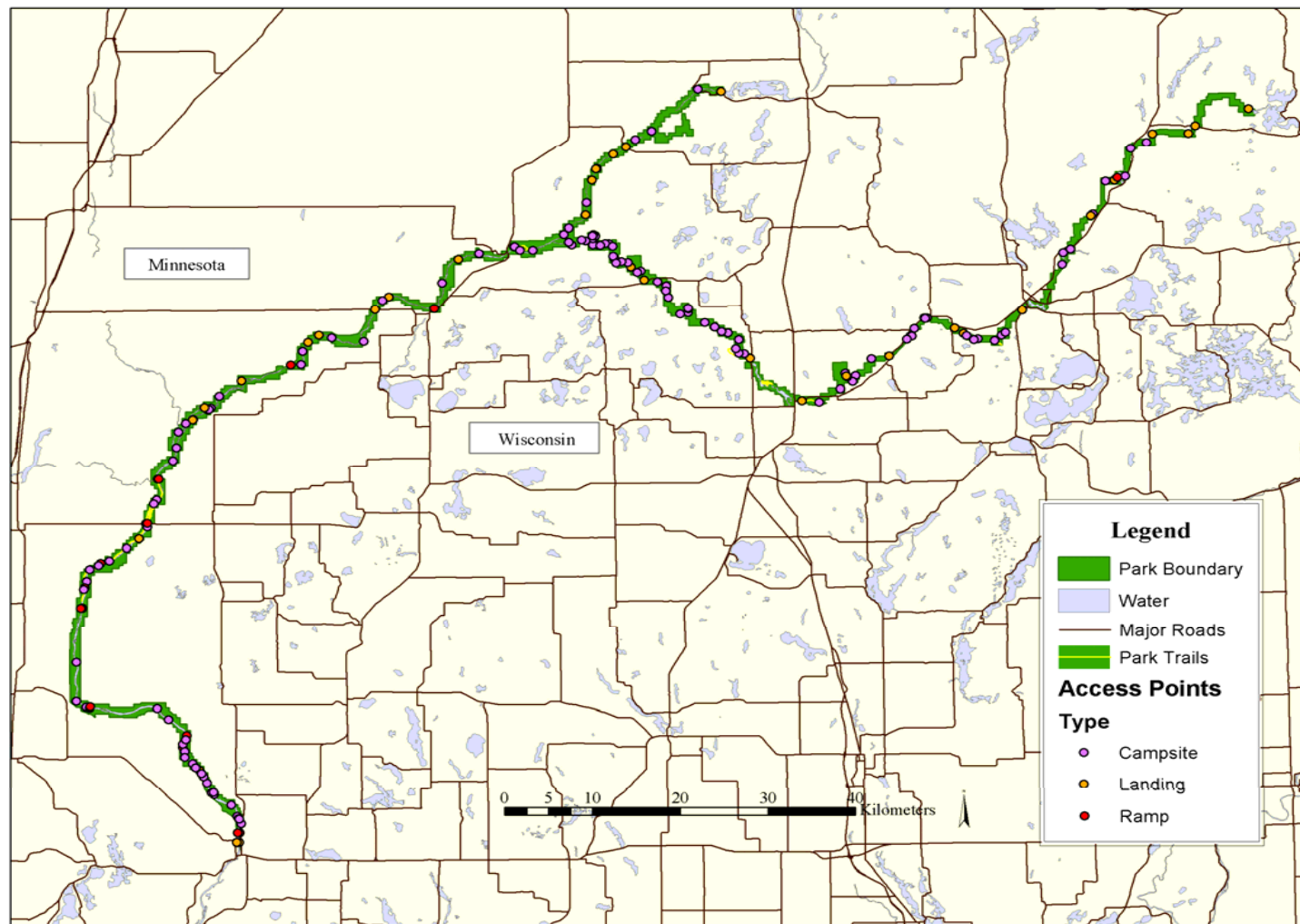
Critical resources: High water quality is found throughout the riverway and the St. Croix and Namekagon Rivers are listed as "Outstanding" or "Exceptional Water Resource" by Minnesota and Wisconsin. Gray wolves are returning to the region and self-sustaining packs are known to reside in the northern portions of the riverway. The forested areas are slowly returning to pre-European settlement conditions, and monitoring the progression is integral to understanding terrestrial communities.

Primary threats: Airborne pollutants, waters contaminated with toxic waste, exotic plants and animals (especially exotic mussels), diseases spread from domestic animals, land use practices outside the boundaries in the upper end of watersheds, potential for some over-harvesting of fish, and urban sprawl along the lower section of the St. Croix River.

Important management documents: The General Management Plan for the upper St. Croix and Namekagon Rivers was completed in 1997 and the Cooperative Management Plan for the lower St. Croix River is near completion in 2001. The Resource Management Plan was completed in 2000.

For important park monitoring reports see Supplemental Document #3

APPENDIX B. CONTINUED



Map of the northern portion of the St. Croix National Scenic Riverway and surrounding area.

APPENDIX B. CONTINUED



Map of the southern portion of St. Croix National Scenic Riverway and surrounding area.

APPENDIX B. CONTINUED

Sleeping Bear Dunes National Lakeshore (SLBE)

Establishment: October 21, 1970.

Designations: National Lakeshore; Class II airshed. Wilderness designation has been recommended for 30,903 acres. Congressional legislation in 1982 requires that these areas be administered to “maintain presently existing wilderness character and potential... ..until Congress determines otherwise”.

Purpose and significance statements important to ecological monitoring:

- To preserve and protect natural features, including forests, beaches, dune formations, and ancient glacial phenomena.
- To identify, inventory, study, monitor, restore, and protect the natural flora, fauna, geological features, and the natural systems endemic to the area.

General description: Sleeping Bear Dunes protects 71,189 acres of land and water along the northeastern shore of Lake Michigan. The lakeshore includes two large islands in Lake Michigan: North and South Manitou. There are 65 miles of Lake Michigan shoreline, 26 inland lakes, and four streams. The interior forested areas are dominated by American beech and several species of maple.

Visitation and human uses: In 2002, the lakeshore experienced 1.2 million visitor use days. The Manitou Islands are reached by ferries during the summer months; there is no visitor access to offshore areas from November through April. The lakeshore is open to hunting and fishing, which is managed cooperatively with the state of Michigan. Trapping is not allowed. Typical visitor activities include summer and winter camping, canoeing, kayaking, swimming, boating, sight seeing, motor travel, dune climbing, bicycling, cross country skiing, snowshoeing, and ice fishing.

Critical resources: The federal and state- endangered piping plover nests along beaches. There are several bald eagle nests in the park, including both islands on Lake Michigan. There are rare orchids and ferns, a grove of giant-sized white cedar, and several federally listed plant species such as Pitcher’s thistle (threatened) and the Michigan monkey flower (endangered). Old farm fields have created grasslands now important to several grassland-nesting birds, which are declining across North America.

Primary threats: Airborne pollutants, surface waters contaminated with toxic waste, exotic plants and animals, diseases spread from domestic animals, human development along the boundaries, impacts from former land use (i.e., dumps, gravel pits, farms), visitor use impacts.

Important management documents: The General Management Plan was completed in 1979 and a new GMP was being developed when planning was stopped by the Department of Interior in October, 2002. The following resource plans are in place or being developed: Water Resources Management Plan (2002), Fire Management Plan (under development), Cultural Resource Plan (1998), Land Protection Plan (1999 draft), and Natural Resource Management Plan is in place.

For important park monitoring reports see Supplemental Document #3

APPENDIX B. CONTINUED



Map of Sleeping Bear Dunes National Lakeshore and surrounding area.

Voyageurs National Park (VOYA)

Establishment: Authorized 1971.

Designations: National Park. Designated a Class I airshed. Wilderness recommendation for 90% of the park is awaiting congressional action.

Purpose and significance statements important to ecological monitoring:

- Preserve the scenery, geologic conditions, and interconnected waterways in northern Minnesota for the inspiration and enjoyment of people now and in the future.
- Preserve, in an unimpaired condition, the ecological processes, biological and cultural diversity, and history of the northwoods lake country border shared with Canada.
- Provide opportunities for people to experience, understand, and treasure the lake country landscape — its clean air and water, forests, islands, wetlands, and wildlife — in a manner that is compatible with the preservation of park values and resources.
- Voyageurs is integral to the protection of the boundary waters ecosystem. Along with Quetico Provincial Park and the Boundary Waters Canoe Area Wilderness, Voyageurs was and remains at the heart of a major conservation effort to protect the boreal forest landscape, its interconnected waterways, and associated wildlife.

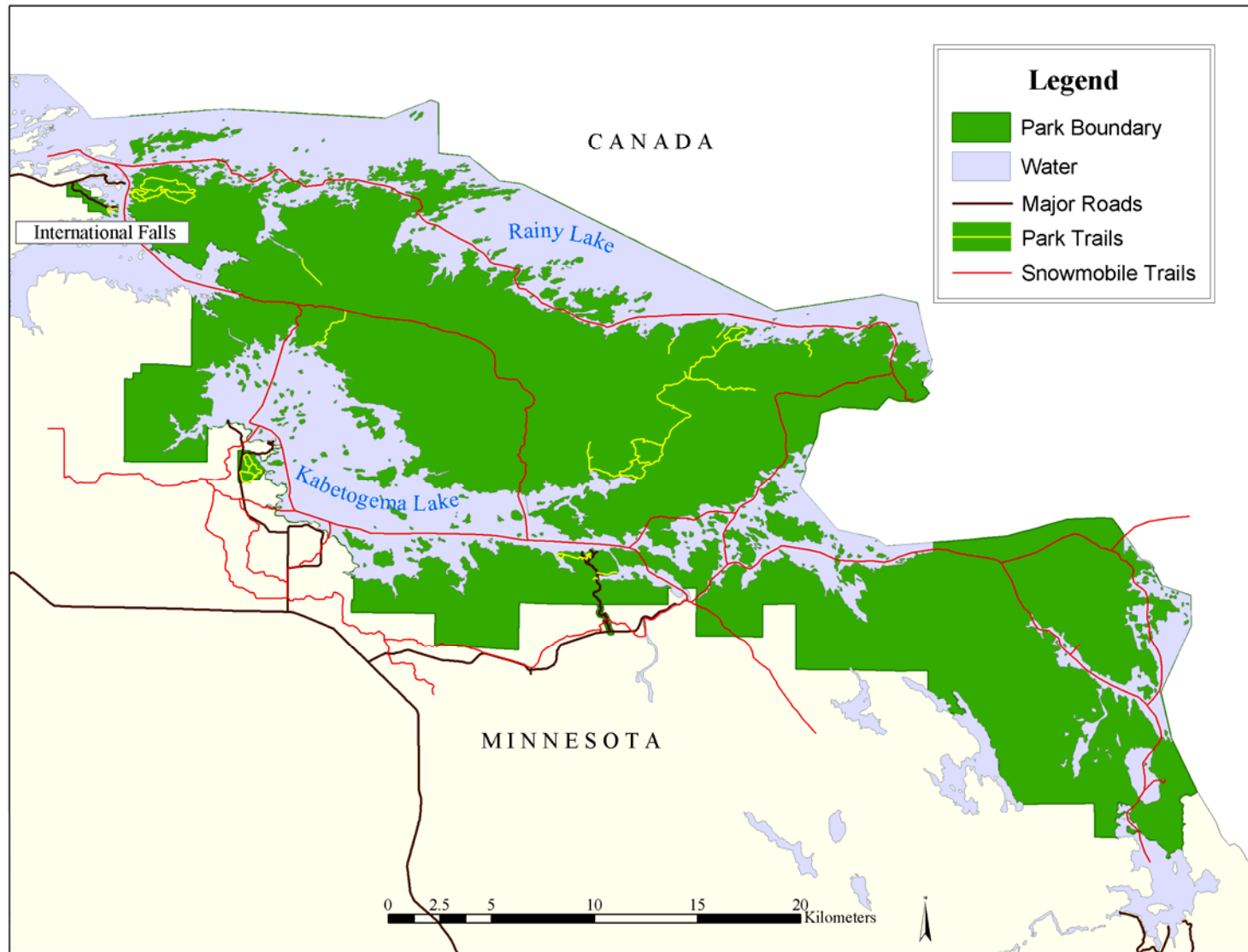
General description: Voyageurs National Park is located approximately 300 miles north of Minneapolis, Minnesota in the forested lake region along the Minnesota-Ontario border. Voyageurs comprises 218,054 acres, of which approximately 83,789 acres (38%) are covered by lakes and ponds. Two large reservoirs, with hundreds of islands, form much of the lake area, but there are 26 smaller lakes and hundreds of beaver ponds and drainage systems. The interior of the park is typical southern boreal spruce/fir forest, but deciduous trees dominate some areas.

Visitation and human use: The NPS estimates about 250,000 visitor-use days for Voyageurs annually, which has remained consistent over the last 10 years. Visitors primarily use the park for motor boating, resort living, and camping in the summer, although canoeing, kayaking, and sailing are becoming increasingly popular. Fishing is a primary attraction during summer and winter. During winter, snowmobile use is a primary activity (> 35,000 visitor-use days). Cross-country skiing, snowshoeing, winter camping, and ice fishing are also popular.

Critical resources: Loons (Minnesota state bird), other aquatic-nesting birds, and bald eagles are of high concern due to regulated lake levels and aquatic contamination. Walleye is a major concern due to its importance in sport fishing. Gray wolves, federally listed as threatened, utilize park habitats. Common terns and other colonial nesting birds, which have experienced declines throughout the region, are of concern. A number of rare plant communities associated with the southern end of the boreal forest are present in Voyageurs.

Primary threats: Unnatural fluctuations in water levels, airborne pollutants, waters contaminated with toxic chemicals, invasive exotic plants and animals, diseases spread from domestic animals, disturbance from certain human uses.

Important management documents: General Management Plan (2001). Interim Resource Management Plan (2000). Draft Water Resource Management Plan (2003). Cultural Resource Management Plan (1994). Fire Management Plan (2002). Land Protection Plan (1994). Wilderness Recommendation (1991). Lake Country and Back Country Site Management Plan (1988). **For important park monitoring reports see Supplemental Document #3**



Map of Voyageurs National Park and surrounding area.